# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

#### LAKE TROPHIC DATA

#### MORPHOMETRIC:

Lake: BAKER POND, LOWER	Lake Area (ha):	38.28
Town: WENTWORTH	Maximum depth (m):	10.6
County: Grafton	Mean depth (m):	5.3
River Basin: Merrimack	Volume (m³):	2045500
Latitude: 43°53'37" N	Relative depth:	1.5
Longitude: 71°58'27" W	Shore configuration:	1.23
Elevation (ft): 895	Areal water load (m/yr	): 77.38
Shore length (m): 2700	Flushing rate $(yr^{-1})$ :	14.50
Watershed area (ha): 4169.9	P retention coeff.:	0.28
<pre>% watershed ponded: 1.9</pre>	Lake type: natura	al w/dam

BIOLOGICAL:	15 January 1997	25 July 1996
DOM. PHYTOPLANKTON (% TOTAL) #3	SPARSE - NO DOMINANT	SYNURA 25%
#2		CHRYSOSPHAERELLA 18%
#3	3	ASTERIONELLA 15%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		4.65
DOM. ZOOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	KERATELLA 28%
#2		POLYARTHRA 14%
#3	3	VORTICELLA 14%
ROTIFERS/LITER	2	49
MICROCRUSTACEA/LITER	9	16
ZOOPLANKTON ABUNDANCE (#/L)	11	112
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		2.7
BOTTOM DISSOLVED OXYGEN (mg/L)	5.5	0.3
BACTERIA (E. coli, #/100 ml) #:		
#:	2	
#:	В	

### SUMMER THERMAL STRATIFICATION:

#### stratified

Depth of thermocline (m): 6.7 Hypolimnion volume  $(m^3)$ : 67250 Anoxic volume  $(m^3)$ : 67250

CHEMICAL:			BAKER PON WENTWORTH		
	15 January 1997		25 3	July 1996	
DEPTH (m)	3.5	7.0	3.0	7.5	9.5
pH (units)	6.3	5.8	6.6	6.1	6.2
A.N.C. (Alkalinity)	5.1	5.8	5.8	6.0	6.2
NITRATE NITROGEN	0.08	0.07	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.29	0.41	0.12	0.12	0.31
TOTAL PHOSPHORUS	0.012	0.009	0.007	0.007	0.010
CONDUCTIVITY (µmhos/cm)	36.2	36.7	36.3	37.6	39.9
APPARENT COLOR (cpu)	23	28	55	55	65
MAGNESIUM			0.50		
CALCIUM			2.8		
SODIUM			2.6		r.
POTASSIUM			0.62		
CHLORIDE	< 2	2	3		3
SULFATE	5	5	4		4
TN : TP	31	53	17		31
CALCITE SATURATION INDEX			3.5		

All results in mg/L unless indicated otherwise

#### TROPHIC CLASSIFICATION: 1996

D.O.	s.D.	PLANT	CHL	TOTAL	CLASS
4	3	1	1	9	Meso.

#### **COMMENTS:**

- This pond was previously surveyed and classified in 1980. It was classified eutrophic in 1980. The change in classification was due primarily to the revised classification scheme that now takes into account the extent of dissolved oxygen depletion. There was little change in the actual D.O. between the two dates.
- 2. Chlorophyll and phosphorus values improved but water clarity decreased between the two dates; however, more frequent sampling is needed to detect trends.
- 3. A decent gravel boat launch exists into shallow water with sufficient parking.
- 4. A juvenile camp (Camp Pemigewasset) was located along the southeastern shore.

#### FIELD DATA SHEET

LAKE: BAKER POND, LOWER DATE: 07/25/96 WEA

TOWN: WENTWORTH

WEATHER:	OVERCAST	 RAIN

	(°C)	OXYGEN	SATURATION
0.1	20.0	9.3	102 %
1.0	20.0	9.3	102 %
2.0	20.0	9.3	102 %
3.0	20.0	9.2	101 %
4.0	19.0	8.9	94 %
5.0	18.0	7.9	82 %
6.0	18.0	7.3	77 %
7.0	14.8	2.3	22 %
8.0	12.0	1.2	11 %
9.0	10.8	0.8	7 %
10.0	10.0	0.3	3 %
	2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0	2.0     20.0       3.0     20.0       4.0     19.0       5.0     18.0       6.0     18.0       7.0     14.8       8.0     12.0       9.0     10.8       10.0     10.0	2.0     20.0     9.3       3.0     20.0     9.2       4.0     19.0     8.9       5.0     18.0     7.9       6.0     18.0     7.3       7.0     14.8     2.3       8.0     12.0     1.2       9.0     10.8     0.8       10.0     0.3

SECCHI DISK (m): 2.7 COMMENTS:

BOTTOM DEPTH (m): 10.5

TIME: 1130

\*Dissolved oxygen values are in mg/L

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# AQUATIC PLANT SURVEY

LAK	E: BAKER POND, LOWER	TOWN: WENTWORTH	DATE: 07/25/96	
V	PLANT	NAME	ADUNDANCE	
Кеу	GENERIC	COMMON	ABUNDANCE	
s	Sparganium	Bur reed	Scattered	
F	Nymphoides cordatum	Floating heart	Scattered	
P	Pontederia cordata	Pickerelweed	Scattered	
W	Potamogeton	Pondweed	Scattered	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
Е	Eriocaulon septangulare	Pipewort	Sparse	
L	Lobelia dortmanna	Water lobelia	Sparse	
Х		Sterile thread-like leaf	Sparse	
N	Nymphaea	White water lily	Sparse	
		·		

## OVERALL ABUNDANCE: Scattered

# GENERAL OBSERVATIONS:

1. A wetland area was present near the inlet stream at the northwestern end.